

**REMARKS**

In the present Amendment, Claims 1, 29 and 30 have been amended to replace “such as” with “selected from the group consisting of” and to improve their form.

Claims 5-9 were previously canceled.

No new matter has been added and entry of the Amendment is respectfully requested.

Upon entry of the Amendment, Claims 1-4 and 10-30 will be all the claims pending in the application.

**I. Drawings**

The Examiner does not acknowledge that the drawings filed with the application on December 28, 2001, have been accepted. The Examiner is respectfully requested to acknowledge such acceptance with the next PTO communication.

**II. Response to Rejections Under 37 C.F.R. § 103**

a. Claims 1-4, 10, 22-23 and 29 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yoshikawa et al (U.S. Patent 4,872,932) (“Yoshikawa”) in view of Bellamy (U.S. Patent 3,897,583) (“Bellamy”).

Applicants respectfully traverse the rejection for the following reasons.

Bellamy discloses coating a vulcanized rubber onto metal reinforcement such as wire tire fabric or tire bead wire (col. 3, lines 19-23). Bellamy further exemplifies the use of a wire tire cord of 5 x 7 x 0.0058 inch over twisted 3 x 1 x 1 construction commonly employed in making the plies of a pneumatic tire.

On the other hand, the present claims require that the fiber is substantially non-bundled and is a fiber aggregate comprising a single filament or ten pieces or less of filaments (Claim 1); or is a fiber aggregate consisting of glass wool, nonwoven fabric, knitted fabric and net fabric (Claim 29).

Applicants submit that the twisted wire cord described in Bellamy does not meet the requirements of the present claims. Therefore, even if, *arguendo*, there might be motivation to combine Bellamy with Yoshikawa, the combination still would not result in the present invention.

In view of the foregoing, Applicants respectfully submit that the present claims are not obvious over the cited references, and thus the rejection should be withdrawn.

b. Claims 1-4, 10, 12, 22-23, and 29-30 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yoshikawa in view of Japanese Patent Publication JP 10-053010 (translation) (“JP ‘010”).

Applicants respectfully traverse the rejection for the following reasons.

JP ‘010 describes improved rigidity of a tire sidewall part and steering stability of a tire by integrating a filament fiber with rubber through a predetermined area between a carcass layer and a sidewall (Paragraph Nos. ([0007] and [0008]), in particular, the rubber-filament fiber composite body is arranged from the upper end of a bead filler through more than at least 35% of the maximal width end of the belt part between at least one sheet, and the carcass layer and the sidewall (Paragraph No. [0009]). However, there is no indication or suggestion in JP ‘010 that the use of the rubber-filament fiber reinforcement member, let alone the filament fiber, is

attributable to the improved properties. Moreover, in the examples of JP '010, inventive Examples 1 and 2 and Comparative Example 3 contain the same reinforcement member. Examples 1 and 2, with reinforcement member coating percentage of 60% and 85%, respectively, show improved steering stability in comparison to Comparative Example 3 with reinforcement member coating percentage of 30% (Table 1). Applicants respectfully submit that there is no motivation to substitute the filament fiber of JP '010 for the substrate of Yoshikawa. Further, JP '010 is silent about improved fiber-rubber adhesion in the present invention.

In view of the foregoing, Applicants respectfully submit that the present claims are not obvious over the cited references, and thus the rejection should be withdrawn.

c. Claim 11 has been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yoshikawa in view of Marshall et al (U.S. Patent 4,397,985) ("Marshall") in view of Shindo et al (U.S. Patent 5,049,447) ("Shindo"),

Applicants respectfully traverse the rejection for the following reasons.

Shindo describes a dipping treatment of polyester multifilaments. On the other hand, present Claim 11 requires a monofilament. Therefore, even if, *arguendo*, there might be motivation to combine Yoshikawa with Marshall and Shindo, the combination still would not result in the present invention.

Further, Applicants submit herewith a Declaration under 37 C.F.R. § 1.132 of Mr. Masaaki Nakamura, a co-inventor of the present invention. The Declaration demonstrates the differences in adhesion properties between the present invention and dry plated multi-filament

cords or short fibers made of the dry plated multi-filament cords, and further supports the patentability of the present invention.

Specifically, in the Declaration, the multi-filament cords of Comparative Examples A to E were made by twisting 20 mono-filaments at 2 turns/10 cm by a twisting machine.

Comparative Example A was prepared according to the same procedure for plasma cleaning and dry plating treatments as Example 2 described in the present specification. Comparative Examples B to E were prepared according to the same procedure for plasma cleaning and dry plating treatments as Examples 9, 10, 11, 25, 26 and 27 of the present specification.

Adhesion at 200% elongation of the short fibers made from the treated multi-filament cords of Comparative Examples A to E and the short fibers of Examples 2, 9, 10, 11, 25, 26 and 27 of the present specification were evaluated in the same manner described in the present specification. In addition, adhesion at 200% elongation of the twisted treated multi-filament cords of Comparative Examples A to E were evaluated. Further, pneumatic tires were prepared and tested in the same manner as described in the present specification by using the short fibers of Example 2 and Comparative Example 1, respectively (bead filler rubber adhesion). The results are summarized in the following Table 1.

Table 1-1

	Example 2	Comparative Example A	Example 9	Comparative Example B	Example 10	Comparative Example C
Fiber Material	Polyester	Polyester	Polyarylate	Polyarylate	Nylon	Nylon
raw material kind	F-3	F-3	F-5	F-5	F-6	F-6
single fiber diameter ( $\mu$ m)	103	twisted multi-filaments cord	45	twisted multi-filaments cord	125	twisted multi-filaments cord
Rubber Composition	G-2	G-2	G-2	G-2	G-2	G-2
Evaluation Results						
(1) Adhesion at 200% elongation for short fibers	A	C	A	C	A	C
(2) Adhesion at 200% elongation for twisted cords		C		C		C
(3) Bead filler rubber short fiber adhesion	A					
(4) Bead filler rubber twisted cord adhesion		C				

Table 1-2

	Example 11	Comparative Example D	Example 25	Example 26	Example 27	Comparative Example E
Fiber Material raw material kind single fiber diameter ( $\mu$ m)	Aramid F-7 100	Aramid F-7 twisted multi-filaments cord	glass I-4 9	glass I-5 9	glass I-6 10-24	glass I-4 twisted multi-filaments cord
Rubber Composition	G-2	G-2	G-2	G-2	G-2	G-2
Evaluation Results (1) Adhesion at 200% elongation for short fibers	A	C	A	A	A	C
(2) Adhesion at 200% elongation for twisted cords		C				C

As the results in the above tables show, the adhesion properties of the short fibers of Examples 2, 9, 10, 11, 25, 26 and 27 according to the present invention (no or substantially no peeling) are unexpectedly superior to those of the multi-filament cords of Comparative Examples A to E and the short fibers made thereof (peeling or break due to peeling).

In view of the foregoing, Applicants respectfully submit that the present invention is not obvious over the cited references, and thus the rejection should be withdrawn.

### **III. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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